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The CCAMLR journey through the eyes of ECO

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ABSTRACT

The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), adopted in 1980, is often presented as a standard for responsible and precautionary fisheries management. The precautionary principle forms the basis of the objectives for the Convention. Almost 40 years on it is time to pose the question: has the Convention been successful in achieving its objective of conserving Antarctic marine living resources? And has the precautionary principle been applied? This paper reviews the efforts of CCAMLR in implementing its objectives through the eyes of conservationists. It concludes that while CCAMLR has made some significant advances, it has struggled at every step, and currently faces strengthening pressure from some of its Members to abandon both its conservation-based objective and the precautionary principle altogether for a more 'evidence-based' fisheries management approach.

Key Words

precautionary principle, ecosystem approach, conservation, fisheries management

The CCAMLR journey through the eyes of ECO[1]

The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), adopted in 1980, is often presented as a standard for responsible and precautionary fisheries management. The precautionary principle forms the basis of the objectives for the Convention. This principle was enshrined in international law through Principle 15 of the Rio Declaration[2] in 1992, which states 'In order to protect the environment ... where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.'

Constable et al (2000) reflects that the intention of CCAMLR's Objective is to embed an ecosystem-based fisheries management approach into all decisions made under the Convention.

Almost 40 years on it is time to pose the question: has the Convention been successful in achieving its objective of conserving Antarctic marine living resources? And has the precautionary principle been applied? Are management measures being made when there is insufficient information to prove threat? In reviewing CCAMLR Reports over the period of its existence, CCAMLR has attempted to frame its decisions around its central objective in some areas and has also made significant progress in some other areas. However, it has noticeably also found this task extremely challenging. The process has been not so much 'continuous and step-wise' but through a series of lurches associated with initial lengthy periods of strong resistance to action. In 2018, it seems that CCAMLR is at yet another challenge-point – perhaps a tipping point for the ongoing viability of the Convention – where there is strengthening pressure from some Members to abandon the precautionary principle altogether for a more 'evidence-based' management approach.

This paper reviews the efforts of CCAMLR in implementing its objectives through the eyes of ECO editions published by the Antarctic and Southern Ocean Coalition (ASOC) at many CCAMLR meetings between 1982 and 2017. ASOC represents the citizen-based conservation view at CCAMLR meetings and brings together over 100 conservation organisations from 30 countries who share the objective of maintaining the Antarctic continent and the surrounding Southern Ocean for their global conservation, wilderness and science values. ASOC has been present from the very beginning, at the actual negotiations for the Convention, where, while not permitted to be in the negotiations, it lobbied from the margins for conservation of the Southern Ocean to form the basis of the agreement.

The initial years: bye bye Notothenia rossii

The first meeting of the Commission for the Convention was held in May 1982, in Hobart, Australia. Sixteen nations and four international organisations were present[3]. Article IX of the Convention articulated the Commission's function as 'to give effect to the objective and principles set out in Article II of the Convention', with the assistance of a Scientific Committee to provide scientific advice based on the 'collection, study and exchange of information with respect to the marine living resources to which this Convention applies' and at the Commission's direction.

As one might expect, establishing the financial and administrative framework and scientific infrastructure to support the Convention were early priorities. However, the Commission seemed uninterested or unable to tackle the growing depletion of stocks inherited from the unregulated fishing prior to the establishment of the Convention. The frustration felt by conservationists at this lack of engagement was reflected in the ECO papers distributed at each meeting: 'Hobart nothing more than a circus' (ECO 1982); 'Credibility Crisis: CCAMLR's Challenge' (ECO 1984); 'Antarctic Fisheries: Collapse is Complete'(ECO 1985); 'The Great Crash' (ECO 1987).

From the outset it was obvious that some Members considered the precautionary principle to be an irrelevance to their fundamental right to fish and these Members had no qualms in utilising the consensus decision-making rule to achieve their national goals. Indeed, the first meeting of the Commission of CCAMLR took a full week to reach agreement on its agenda.

This approach carried through to the Scientific Committee, where some Members demanded that only consensus recommendations could be presented to the Commission, rather than the more usual approach of providing a range of views, thus leaving the political decisions to the Commission. Unfortunately, the consensus advice approach became customary practice for the Scientific Committee, and while dissenting views are now presented to the Commission, some Members remain committed to the consideration of consensus scientific advice only.

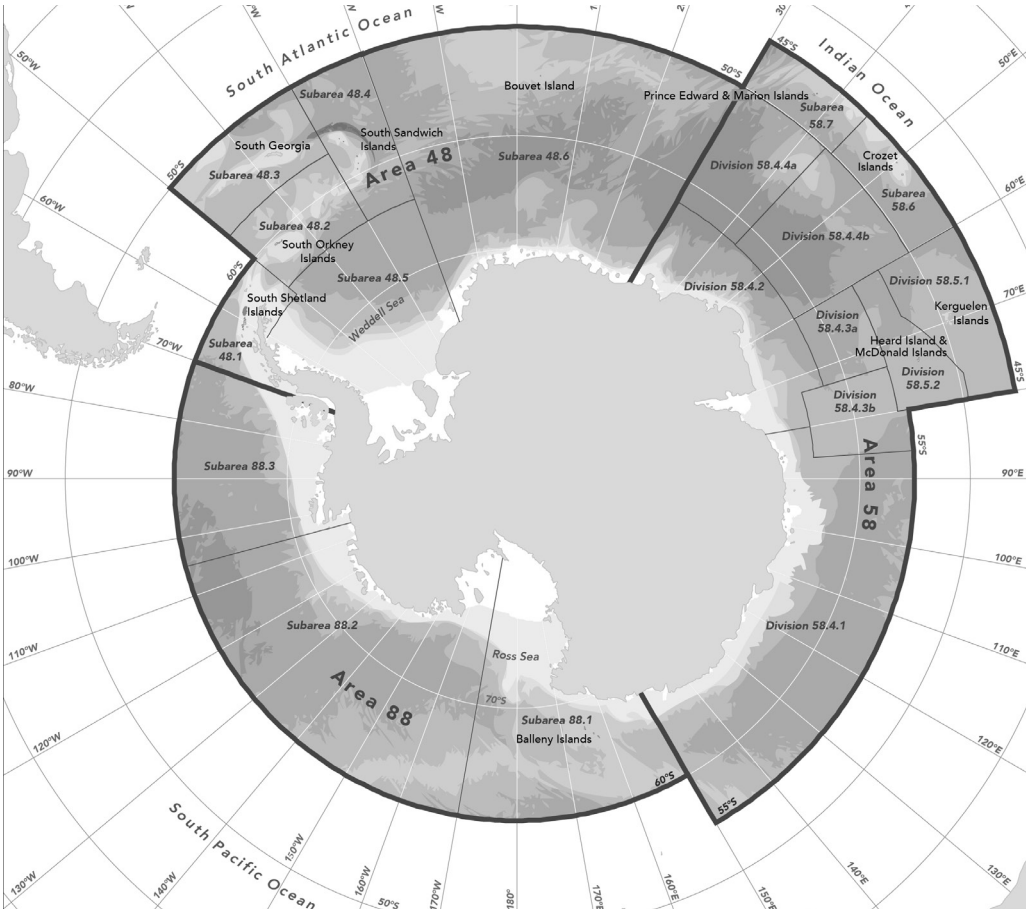
A primary reason for the development of CCAMLR was to address the growing interest in the Southern Ocean toothfish fishery, and specifically to generate more orderly management of the several severely depleted toothfish stocks around the Antarctic Peninsula and South Georgia (see Map 1). While many delegates in these early years accepted that some species in some areas might already be over-exploited, and that the underlying premise of the Convention required CCAMLR to operate on the best data available, the Commission found itself unable to act in the absence of consensus scientific advice. Development of such advice was also hampered by the significant differences of view in the way data should beanalysed and collected, including cost issues.

In the meantime, the finfish stocks continued to decline.

In 1986, the ECO headline 'Bye Bye N. rossii' and accompanying article succinctly captured the conservationist view:

It is becoming increasingly evident from the reports of previous Scientific Committee meetings that several stocks of finfish are seriously depleted. Last year's analysis showed that the stocks of Notothenia rossii (Marbled Rockcod) around South Georgia have totally collapsed due to overfishing.

Furthermore, previously expressed concerns about the depleted status of ALL finfish stocks in the South Georgia area and in the rest of the South Atlantic sector of the Convention area, are now echoed by the majority of the Scientific Committee. Such dramatic over-exploitation of finfish demonstrates the immediate need for a management strategy that will ensure the full recovery of depleted finfish stocks and prevent future depletions.



Map 1. *Map of the CAMLR Convention area (updated October 2017), www.ccamlr.org/node/86816)*

Scientists agreed. Even as they warned that total biomass estimates for N. rossii were just 5 per cent of the amount caught in 1969, the first year of commercial fishing, the Commission struggled to implement the precautionary principle, and some Members acted as if the party would go on forever. For example, in 1987 the Soviet Union dramatically increased its fishing effort in the South Georgia area during the early part of the season, sending more than 20 vessels instead of its usual five or six.

Progress was further hindered by the lack of agreement in the Scientific Committee around the necessary spatial and temporal scales upon which catch and effort data for commercial operations could be collected. Some Members not wanting controls argued that there was insufficient proof upon which to provide strong scientific advice on fish stocks, refused to agree to common standards for the collection of data, and then when the data did become available

contested the validity of the data.

In 1988 ECO applauded both the Scientific Committee and the Commission for its work, noting the slow but positive progress toward the implementation of Article II, availability of data, the closure of the mackerel icefish (Champsocephalus gunnari) fishery, acceptance of the concepts of Total Allowable Catch (TAC) and closed seasons/areas, and positive steps toward the development of a comprehensive system of inspection and observation. Sites were also set up under the CCAMLR Ecosystem Monitoring Program (CEMP) to detect and record changes in the marine ecosystem in response to fishing activity, and ASOC was invited to attend the Commission plenary sessions as an Observer.

Unfortunately the hope faded the following year. ECO 3 (ECO 1989) in 1989 reads:

ECO wishes to congratulate the Commission for beginning to commence thinking about considering the possibility of perhaps drawing up some comprehensive conservation measures to protect the fish-stocks – which have already gone....

For eight meetings, ECO has watched Commission Members come closer and closer to grasping the nettle – in light of an absence of data, coming to terms with the need to take a precautionary approach to the harvesting of finfish species, such that some might actually hang around to be available to be caught in the next year! ECO is amazed at the number of ways an 'almost-decision' can be made.

And the finfish stocks disappeared.

While some Members excused the lack of progress on finfish measures by arguing that effective management for krill fishing should be their focus, there was little progress there also. Krill is the central species in the Southern Ocean's short marine ecosystem; significant changes in krill available thus directly impact many species, including whales, seals, penguins, albatrosses, petrels, squid and, indirectly, fish. Yet, as scientists admitted significant gaps in their knowledge of krill distribution and the biology of krill, and the Commission admitted its inability to determine the effect of fishing activity on krill stocks and dependent species, the Soviet Union and Japan divulged that they deliberately targeted gravid (reproductive-age) females, and several nations indicated their intention to significantly expand their krill operations. These nations argued that precautionary measures were unnecessary given that the lack of market and problems with processing would prevent any significant increase in krill fishing in the near future.

During these years, conservationists argued for the application of the precautionary principle to the krill fishery by limiting fishing to existing areasof fishing – around the Antarctic Peninsula, South Orkney Islands, South Georgia and Prydz Bay –until the Commission was able to agree on management controls. They also suggested other concrete measures, including rotation of fishing areas to protect breeding zones, a ban on targeting gravid females, and avoidance of fishing in feeding grounds for predator colonies and rookeries.

No progress was possible on a precautionary krill approach until the Soviet Union, and its highly subsidised Southern Ocean fishery, collapsed in the late 1980s.

It must be acknowledged that during those early years some Members did attempt to progress measures that would assist in the implementation of the objectives of the Convention. For example, in 1984 the United States submitted a proposal to assess and develop measures to avoid the incidental mortality of Antarctic marine living resources. Occurrences of seabird and animal entanglement in lost or discarded fishing gear and deaths associated with some fishing operations were being reported in increasing numbers in other regions. While the Commission didn't think this was a problem for the CCAMLR Area it did request that seabirds, marine mammals and non-target species taken incidentally during fishery operations be reported. By 1987, a dramatic increase in fishing operations in the Southern Ocean had seen a corresponding rise in incidental mortality. Again, there was no substantive mitigation progress for several years.

The United Kingdom initiated a discussion on a system of inspection to ensure compliance, which eventually bore fruit several years later.

Discussions were also begun to consider developing a conservation strategy 'to carry forward the development of possible conservation approaches for achieving the objectives of the Convention, as set out in Article II, by the application of the conservation measures specified in Article IX' (CCAMLR 1988). This generated some hopeful discussions around the need for consideration of alternative scientific approaches to fisheries in the absence of full information. A common understanding of 'rational use' was also discussed, and general agreement reached that resource harvesting should be sustainable, that harvesting on a sustainable basis meant that harvesting activities should be conducted to ensure that the highest possible long-term yield could be taken from a resource subject to the general principles of conservation, and that the cost-effectiveness of activities and their management was also given due weight.

In 1990, the Commission stated that it needed timely scientific evidence to assist in its management considerations but agreed that it was still obliged to make decisions when the Scientific Committee was unable to provide that advice. Specifically, the Commission agreed that 'the absence of essential data should be taken into account when determining catch limits: in the absence of data, very conservative catch limits should be set' (CCAMLR 1990).

During this time, the Commission's attitude toward transparency and accountability was also not encouraging. While some scientific organisations were admitted as Observers from the first meeting, the applications of the citizen-based organisations ASOC and Greenpeace International were denied on the basis that the IUCN (International Union for Conservation of Nature), a quasi-government organisation, was sufficient coverage for conservationist groups. Observer attendance was limited to plenary meetings and the capacity to speak was very limited. In addition, Observers were not able to present papers unless specifically requested to do so.

It was not until 1989 that ASOC was granted Observer status to the plenary sessions of the Commission, and from the following year routinely to both the Commission and the Scientific Committee.

Fast forward to 2018 and full transparency continues to be problematic for CCAMLR. While the Commission has made its Meeting Reports publicly available and now routinely circulates a press release at the conclusion of its meetings, papers presented to the meetings, including those from the 1980s and 1990s, must be requested from the Secretariat, which must first seek permission from the author country before release. Some Members have repeatedly attempted to reset this process, suggesting variously that papers from meetings could be made publicly available after some years, that Members could mark their papers publicly available at the time of submission, or that Members could make a general statement about the availability of their papers. In stark contrast to many other international organisations that have embraced the citizen-stakeholder groups, applications for Observer status to CCAMLR from other environmental organisations continue to be refused. This has led to some very large ASOC delegations during recent years! In general, Observers are not invited to the working groups of the Scientific Committee, thus restricting their capacity to input expertise at the time of initial formulation of scientific advice, particularly around ecosystem monitoring and management. Some Commission Chairs continue to take a strongly restrictive approach to the frequency and length of Observer interventions, including those invited to provide information to the meeting. In addition, one nation routinely blocks consideration of proposals initially presented by ASOC, even when these are taken up by Member States.

The 'see-saw' years and advent of new fisheries

In 1989, things seemed to be looking up with the commencement of substantive discussions to address new and developing fisheries, support for the development of the comprehensive conservation strategy that would encompass ALL activities in an area, not just the target stocks, and almost routine consideration of fishery management conservation measures for some parts of the Convention Area. There were also inklings of awareness of the need to discuss a precautionary management policy for the krill fishery.

Of course, there was a long way to go. The continued 'single species' management approach was fundamentally insufficient to deal with the broader issue of overfishing and to encourage recovery of all affected stocks. CCAMLR still lacked the necessary tools to support effective stock management – a standardised data collection system and an effective system of scientific observation, key to ensuring that the biological data collected were accurate.

New issues were also arising. While the Commission continued to struggle with the problem of recovery measures for already depleted finfish stocks, new fisheries and new gears were being initiated, particularly for lantern fish and Patagonian toothfish (Dissostichus eleginoides) in the same area, without even basic estimates of size of stock, knowledge of predators, and the long-term impact of those gears.

The Soviet Union opened a new longline Patagonian toothfish fishery in that year, the first new fishery for CCAMLR, and reported a catch of 4138 tonnes, a massive increase on their previous Patagonian toothfish catches.

There were several problems with the management of this new longline fishery. The Scientific Committee reported that it was extremely difficult to develop accurate stock assessments of longline fisheries and that there was a substantial risk that the present catch levels of more than 4000 tonnes were unsustainable. There was also considerable evidence that longlining in the Southern Hemisphere had been a major factor in the decline of the wandering albatross (Diomedea exulans). And South Georgia, site of the longlining, is home to the largest rookery of this species. Unfortunately the Commission was unable to set a TAC that year, and USSR increased their fleet in the following season.

This discussion was occurring amidst a documented collapse of fisheries in all major ocean areas of the world. Ignoring this, CCAMLR continued to grapple with the delivery of any real precautionary measures in the protection and management of the marine resources it was responsible for.

These few years are reflected in ECO as a 'see-saw' of hope and frustration. 1989's final ECO concluded:

ECO wishes to congratulate the Commission for beginning to commence thinking about considering the possibility of perhaps drawing up some comprehensive conservation measures to protect the fish-stocks – which have already gone.

ECO in 1990 reported a slow positive movement toward ensuring at least temporary survival of depleted fish stocks – particularly around the Antarctic Peninsula, South Orkneys and South Georgia – precautionary and some breakthrough precautionary decisions made by the Commission around protection of non-target species and catch limits for Patagonian toothfish in the South Georgia area. A landmark decision was also made for the krill fishery, when the Commission agreed to a precautionary catch limit for krill of 1.5 million tonnes for Area 48, based on available knowledge, which it acknowledged to be extremely limited. While several Members were extremely uncomfortable with the high level of this catch limit – nearly three times higher than the current precautionary catch limit of 620,000 tonnes– when information was so poor, there were others who continued to insist that the lack of evidence should be equated with no risk to the ecosystem, and controls would place unnecessary limitations on rational harvesting. While this agreement was not perfect and didn't address competition with land-based predators at the local scale, it was an extremely important step toward applying precautionary and predictive management.

And a Resolution was passed to ban the use of high seas gillnets and driftnets in the Convention Area, in line with United Nations General Assembly Resolution 44/225.

By 1991, however, while conservationists were congratulating Antarctic Treaty nations on signing the landmark Protocol on Environmental Protection, deep concerns remained for the Southern Ocean. A litany of failures were reported in ECO (1991): N. rossii gone, serious decline of several other stocks, slow action to regulate the new longline fishery despite significant concern about the effects on both the stock itself and seabirds, no precautionary controls on the krill fishery, continuing issues with ecological and sampling variability, no standardised or independent system of observation onboard fishing vessels, ongoing issues with the recording, reporting and collecting of reliable data, and systematic rejection of advice provided by the Scientific Committee.

Yet it was obvious that there was a genuine desire and commitment from many of the Members of CCAMLR to make the Convention work, and to sustain the ecosystems and the fish stocks of the Southern Ocean into the future. Although the lack of sustainability of the Patagonian toothfish fishery and the scale of mortality of seabirds from that fishery continued to alarm both conservationists and the Scientific Committee over the next couple of years, there was obvious progress on the implementation of measures designed to ensure the sound management of the ecosystem as a whole.

The IUU era

In the early to mid 1990s a significant illegal, unreported and unregulated (IUU) fishery began developing, in 1997 reportedly taking four times the regulated catch. This consumed the Commission's time during meetings for much of the next ten years, to the detriment of progressing precautionary management measures for the krill fishery.

Yet as evidence of significant IUU activity grew, nations continued to notify for new fisheries of Patagonian toothfish at commercial catch levels based on extrapolations of stock estimates in other areas. As ECO noted in 1997 (ECO 1997a), '... many of the nations [were] citing conservation and enforcement to ensure that "they" don't take all of "our" fish before "we" can take them ourselves.' At the same time, a shameful 2000 seabirds were reportedly killed in the 'legal' longline fishery around South Georgia.

Conservationists warned of a 'CCAMLR crisis' in 1997, (ECO 1997b) noting that CCAMLR's many advances in embedding the Precautionary Principle across some of their management decisions would be rendered meaningless if CCAMLR did not immediately address the threats posed to the Southern Ocean ecosystem from IUU activity. Continuing IUU catches were estimated to be as high as ten times the legal catches for Patagonian toothfish, and an annual seabird mortality of upwards of 120 000, including around 30 000 albatrosses, was also estimated.

Still CCAMLR continued to support the legal fishery and nations continued to block the introduction of even simple measures such as Vessel Monitoring Systems (VMSs) used by other regional and national governments worldwide as a useful tool in combating IUU, and Port-State controls such as catch documentation schemes (CDSs), designed to freeze out IUU markets. This was in part because many of the companies responsible for IUU fishing were based in CCAMLR Member nations!

By 1999, when the legal fishery had all but collapsed while the IUU catch was estimated to be worth around US$600 million annually, Members adopted a CDS. However, without a centralised VMS system or other trade-restricting measures, IUU fishing continued unabated and pirate fish continued to enter the market.

It was not until 2006 that CCAMLR was able to implement sufficient enforcement measures to force IUU operators out of the Convention area. Many measures are now in place, including surveillance, IUU Vessel Listing, Port-State measures, a centralised Vessel Monitoring System (cVMS) and a

requirement for CCAMLR Members to prevent their nationals engaging in IUU activities. That they have not been able to adopt a comprehensive trade measure, however, significantly slowed genuine efforts to address the issue. This is likely a reflection of CCAMLR's general inability to deal with conflicts where other organisations or regions are involved, a problem also seen in their discussions around bird-strike mitigation and IUU activity in areas adjourning the Convention Area, climate change and global vessel safety.

The 'three steps forward, two steps back' years

As CCAMLR turned 15, it faced an increasing number of issues amidst a background of ongoing tension around the interpretation and application of Article II and the Precautionary Principle. While it has made significant progress during these years, it has never quite reached a level of maturity and comfort around its goals.

In 2005 Australia and Chile organised a symposium to provide a forum for an honest discussion of CCAMLR's relationship to global issues of relevance to its management obligations. From the onset, CCAMLR had kept itself isolated from global discussions for fear of United Nations interference in the delicately balanced sovereignty agreement. This was severely impacting on CCAMLR's capacity to effectively deal with IUU fishing, for example. While some progress was made in identifying the need to consider broader conservation objectives, including establishing marine protected areas (MPAs) and addressing destructive fishing practices, as well as mechanisms to enhance cooperation with other elements of the Antarctic Treaty System (ATS) and relevant regional fisheries management organisations (RFMOs), the core tensions remained unresolved.

Coming to grips with a regulatory framework

In 1994, the Working Group on Fish Stock Assessment advised the Scientific Committee that it was unable to provide sound scientific advice on the status of the Patagonian toothfish stocks, and finally Members focused on generating stock assessments and agreements on catch limits. This set the scene for rules around new and exploratory fisheries.

This was an enormous step forward, but it generated a new challenge. Regulatory controls developed for new and exploratory fisheries would disappear if such a fishery became an established fishery, as no such controls existed for existing commercial fisheries.

CCAMLR scientists responded to this challenge and developed the regulatory framework in the late 1990s. The framework was formulated to ensure that appropriate data and information could be collected and analysed for all fisheries to assist the Commission in developing management decisions. This included notification, establishment of research and fishery operations plans and data collection plans, as well as processes for closing and opening areas to fishing.

The framework was based on the understanding that knowledge increased as information increased but the level of precaution should be maintained. This would thus result in increased certainty around the risks associated with the decisions being made.

While this approach has generated some stability and standardisation around the consideration of fisheries-management decisions, some Members considered that precaution should be reduced as information increased. Nearly 20 years later, this debate remains unresolved; until it is, CCAMLR will be unable to fully honour its objectives.

Protection of vulnerable marine ecosystems

Since initial discussions in 2006, CCAMLR has taken strong action in response to United Nations General Assembly Resolution 61/105, which called on states and regional fisheries management organisations (RFMOs) to act to protect vulnerable marine ecosystems (VMEs) and to avoid adverse impacts from destructive fishing gear.

Measures include severe restrictions on the use of bottom-trawling gear, a prohibition on bottom fishing in depths shallower than 550 metres, requirement for prior assessment of the potential impact of any proposed bottom-fishing activities to have significant adverse impact on VMEs, a requirement for all fishing vessels to collect and report catches that include VME-indicator species, notification of VME encounters, move-on rules for any vessel triggering a prescribed VME-indicator level, and protection of registered VMEs until explicitly reopened. Several procedures have been implemented to support these measures, including a VME register, a glossary of terms identifying VME habitats and indicator species, training programs for vessel crews, criteria to assist with identifying VMEs, and an annually updated report of cumulative impact assessments for all bottom-fishing methods. While these are extensive measures, for which CCAMLR should be applauded, bottom longlining is still supported despite an acknowledgement that such gear could cause damage to a potential VME without any VME-indicator species being brought to the surface. And progress on refining VME-specific management measures continues to be deferred given other CCAMLR priorities.

Area protection

The Scientific Committee first considered marine protected areas in response to the 2002 World Summit on Sustainable Development (WSSD) recommendation that management of the oceans should include the establishment of marine protected areas (MPAs), but it was not until 2005 that it initiated a substantive discussion around a strategic approach to the design of a marine protected areas system. To ASOC, this was a discussion well past overdue, as the CCAMLR objective clearly requires Members to conserve marine species and ecosystems beyond any explicit contribution tofisheries management. Area protection offered CCAMLR a tool to ensure specific conservation of unique or rare ecosystems and species, to contribute to global research, and to build in ecosystem resilience.

Throughout the following years, CCAMLR developed a bioregionalisation methodology, acknowledged its commitment to the World Summit on Sustainable Development goal of achieving a representative system of MPAs based on best available science by 2012, adopted the South Orkneys southern shelf MPA in 2009, agreed to nine ‘planning domains’ within which

representative MPAs might be considered, adopted CM 91-04 (2011)[4], which provided a basic framework and process for the designation of MPAs, initiated technical workshops to examine several of the planning domains, and received proposals for large-scale MPAs in the Ross Sea region and within the East Antarctic Domain.

ASOC repeatedly applauded CCAMLR on its progress toward establishing a network of MPAs within the Convention Area and encouraged the Commission to also undertake work to identify vulnerable species, habitats and ecosystems[5]. ASOC Member group WWF provided support for an experts' workshop for bioregionalisation in 2006, which established a 'proof of concept' for the process.

By 2012, however, the cracks were starting to show, as substantial discussion on the content of the two proposals was blocked. The Ross Sea Region MPA, which spans over 2 million sq km, was eventually agreed in 2016 following an extraordinary high-level diplomatic engagement of primary protagonists, in combination with significant compromises, including agreeing to a fixed 35-year duration term. Unfortunately no other proposals have progressed and it is clear that some CCAMLR Members have serious doubts about the nature and purpose of an MPA network. Along with several nations and other observers, ASOC expressed its frustration to the meeting (CCAMLR 2017):

... once again, an agreement could not be reached to create an MPA in the East Antarctic. This is one of the saddest statements made by ASOC in a long time....

Regarding the proposal for an MPA in East Antarctica, for many years we have seen how the Members that have developed this proposal have worked hard, systematically and professionally, paying heed to the doubts and uncertainties of a number of other Members, to no avail…

It is also frustrating to see that in the two weeks of work in this meeting we have not heard a single discussion in which the doubts and uncertainties that these Members hold regarding this proposal were explicitly formulated. This fact not only leaves us worried, it also opens up questions as to how the world will perceive CCAMLR's incapacity to advance its conservation objective.

Tackling complexity and going beyond fisheries management compliance

CCAMLR has also made significant strides with the development and application of compliance measures. These include vessel licensing, a System of Inspection, the Vessel Monitoring System, and the Catch Documentation Scheme. After a very challenging and lengthy development process, CCAMLR implemented an annual Compliance Evaluation Procedure (CCEP) in 2012, designed to assist the annual evaluation of Member compliance. This procedure settled into a relatively open and supportive process for a discussion on non-compliance, where the majority of cases could be resolved without extended debate. However, while some Members have appeared to graciously accept a designation of 'non-compliant' and have focused on means to improve performance, others have strongly opposed such designation, even if for minor issues that can be readily settled.

However, 2017 was a very difficult year for the Standing Committee on Implementation and

Compliance (SCIC), responsible for undertaking the annual evaluation, as China consistently blocked a determination of non-compliance for a minor issue, and aggressively questioned the status of another Member's activity. The Commission eventually passed the Compliance Report without assigning a compliance status to China's issue. This approach is of extreme concern to conservationists as the ability of CCAMLR to affect its objectives and the external credibility of the organisation relies on a robust and honest compliance process.

Climate change

Human-induced climate change and ocean acidification may have profound ramifications for Southern Ocean marine ecosystems, affecting everything from nutrient cycles to organism survival. Scientists raised concerns about the impact of human-induced climatic change on the Southern Ocean ecosystems as early as 1997, declaring that 'there is unambiguous evidence of general warming of ocean waters and transfer of warmed waters to the ocean depths. The possibility of development of anoxic bottom waters is real.' (SC-CAMLR 1997).

The Commission, however, remained largely disengaged, despite the potential for changes in climate to generate uncertainties in the marine ecosystems they are responsible for managing. A non-binding Resolution (Res 30/XXVIII Climate change) agreed in 2010 encouraged Members to actively contribute to science that might inform CCAMLR management decisions. However, efforts to introduce routine information of possible climate change impacts that could then be used to develop management measures have been regularly rejected. Climate change is only explicitly referenced in the context of conservation and management of the region through the marine protected areas Conservation Measures (CMs) and CM 24-04, which creates special scientific study areas after ice-shelf collapse, although these references have not resulted in any heightened interest or action on the acceptance of MPAs.

Given the precautionary framework underpinning CCAMLR's objectives, it would seem imperative that CCAMLR undertakes a comprehensive reassessment of its decision-making procedures as well as its current management measures. For more than ten years, ASOC has reminded Members of their obligations under Article II, and called for the Commission to act on its acknowledgement that consideration of climate change impacts is important when formulating management decisions[6]. Thus far this has not happened.

In recent years China has consistently stated that inclusion of such statements may generate ambiguity and be without scientific support, and with the support of some other nations has insisted that CCAMLR's focus should be limited to the collection of scientific data.

No doubt many CCAMLR scientists and policy makers are thinking about climate change, but this is meaningless if it is not part of policy decisions. It is difficult to see how CCAMLR will understand and take into account impacts from climate change if no areas are set aside from fishing, and if they don't build a risk assessment into their considerations.

THE KRILL FISHERY

CCAMLR's response to its responsibility to manage the krill fishery in a precautionary manner has been tortuous. Even before the data analysis of the year 2000 CCAMLR krill survey in Area 48 could be completed there was renewed interest in krill fishing in anticipation of new potential uses and new fishing technology.

In 2001, CCAMLR established krill catch limits in the South Atlantic sector (Area 48) at 4 million tonnes, subdivided into 1008 million tonnes for the Antarctic Peninsula (Subarea 48.1), 1104 million tonnes for South Orkneys (Subarea 48.2), 1056 million tonnes for South Georgia (Subarea 48.3) and 0.832 million tonnes for South Sandwich Islands (Subarea 48.4). They also agreed that if the total annual krill catch in Area 48 reached a so-called 'trigger level' of 620 000 tonnes[7], additional subdivision of catch would be required in order to prevent local depletion of krill. The krill fishery was not subject to the research requirements applied to other fisheries and was not required to operate a VMS or carry scientific observers.

ECO (2001) noted in response that it was relieved that the krill fishery remained small, given the seeming inability of CCAMLR to develop a sufficiently precautionary management plan for a species at the centre of the Antarctic food web and where concentrated fishing could have profound impacts on predators at a local level.

In 2002, Area 48 was subdivided into 15 Small-Scale Management Units (SSMUs) and the Scientific Committee was tasked with providing advice on catch levels for each subdivision. Unfortunately these SSMUs have never been accepted by Russia and thus have no legal status.

In 2009, CCAMLR agreed to an interim measure (CM 51-07) to distribute the trigger level across Area 48's subareas. Since then, the catch limit for the Antarctic Peninsula has been reached five times, necessitating closure of the fishery before the end of the season.

Moving forward to 2018, and it is difficult not to conclude that CCAMLR has largely missed an opportunity to ensure precautionary measures are in place prior to any expansion. The Antarctic krill fishery is the largest in the Southern Ocean, and while current catches of around 250 000 tonnes remain significantly less than the 620000tonnes 'trigger level', new research has shown that impacts at the local level may be quite profound. The promised scientific feedback mechanism necessary to frame management advice is still in development. Existing management measures are temporary and do not relate to the actual status of the krill biomass. Fishing has now recently returned to Subarea 58.4, after a 20-year absence. Some positive steps have been made on improving scientific observer coverage, and only in few years it will reach the 100 per cent coverage expected for the toothfish fishery.

Eternally hopeful, conservationists do see some possibility for significant imminent progress if the risk assessment approach for the krill fishery introduced in 2016 is implemented alongside allocation of refined trigger levels. This approach would require assessing the risk of impacts on predators at the scale of available data.

Yet tensions around interpretation and application of CCAMLR objectives continued. Yet another symposium hosted by Chile, Australia and the USA in 2015 (CCAMLR 2015) focused specifically on implementation of Article II, generated more differences than it resolved. This led ASOC to express strong concerns that CCAMLR was drifting away from its obligations and towards a position of 'balancing' conservation and rational use, and to considering conservation only in the context of sustainable fisheries management and scientific endeavour rather than in relation to conservation of the Southern Ocean ecosystem as a whole (ASOC 2016).

Role of Environmental Non-Governmental Organizations (ENGOs)

As noted earlier, conservation stakeholders have played an important role in CCAMLR since its inception, and throughout its history have played the part of 'watchdog,' reminding delegates of their obligations to implement the conservation objective of the CCAMLR Convention. The role of ENGOs should not be dismissed simply for their role in advocating for the conservation of the Southern Ocean; rather, their commitment is as legitimate as that of the fishing industry, their skill base is broad, and their knowledge of the system extensive.

The Antarctic and Southern Ocean Coalition (ASOC; www.asoc.org) is a collaborative effort by conservation organizations from around the world which has official observer status within the Antarctic Treaty regime. ASOC has prepared official papers for many Antarctic Treaty and CCAMLR meetings over the years and hosted receptions to highlight special projects of its Member groups and to create space to advance important policy issues being discussed by CCAMLR. Through the support of its Member groups, ASOC has also funded many important initiatives throughout the years, such as supporting the attendance of independent scientists at CCAMLR meetings and workshops, thus bringing valuable science to the management process.

ASOC and its Member groups have also participated directly in science and technical policy work, and in driving innovative initiatives. For example, ASOC and WWF-Norway worked with the krill fishing company Aker Biomarine to establish the Antarctic Wildlife Research Fund (AWR; www.antarcticfund.org) to facilitate and promote research focused around an ecosystem approach to Antarctic krill fishery management. In addition, WWF has been supporting technical workshops and financing science projects in Antarctica, focusing on issues like polar climate.

Another active ASOC Member is The Pew Charitable Trust (Pew), which has been promoting Southern Ocean conservation policies for the last 15 years. Pew was instrumental in the designation of the Ross Sea Region marine protected area (MPA), driving a global campaign to support designation of the MPA. At the political level, Pew worked closely with the U.S. State Department and former Secretary Kerry to undertake high level outreach with China and Russia, which cultimated in meetings where the U.S. secured agreements with Russia and China. Pew also undertook on the ground work in Russia to connect with key decision-makers, supporting annual events in Moscow which brought together key decision makers and CCAMLR member country representatives. In recent years, Pew has provided technical support for Argentina and Chile on development of the Antarctic Peninsula MPA proposal. Pew has supported a large body of additional Southern Ocean

science, including: penguin population monitoring work for the Antarctic Site Inventory (Oceanites); ecosystem modelling work to support krill fisheries management and the Antarctic Peninsula MPA proposal (Farallon Institute); killer whale monitoring to better understand habitat hotspots and population dynamics in the Antarctic Peninsula region (Center for Whale Research); and research on humpback whales in the Ross Sea, including use of genetics and GPS tracking to understand whale migrations from New Zealand waters to the Ross Sea (Pew Marine Fellow Regina Eisert), among others. In addition, Pew has sponsored key conferences such as the 2017 International Marine Protected Areas Conference (IMPAC4) and the 2018 Marine Ecosystem Assessment for the Southern Ocean (MEASO) technical meeting.

Greenpeace hosted Argentinean scientist expeditioners on one of its ships in 1999, who discovered the Larsen B crack. In 2018, Greenpeace undertook an underwater camera survey of the Antarctic Peninsula area.

2018: CCAMLR AT THE TIPPING POINT?

Throughout its existence CCAMLR has struggled to find common agreement on how to achieve its objectives, and recent entrants to the organisation are severely testing the very basis of the Convention. There is no agreement on the relative relationship between conservation and rational use. There is no agreement on what represents rational use. There is no agreement on whether conservation relates only to fisheries management or to the maintenance of a healthy and viable marine ecosystem for its own sake. In a consensus-based organisation, CCAMLR can only be as good as its least committed Member, and there appears to be more than one Member who is intent on undermining CCAMLR's objective to conserve Antarctic marine living resources. China, in particular, views the objective as implying that conservation and rational use are equally aligned, and that the 'customary practice' and 'common understanding' approaches to working together leaves too many opportunities for legal misunderstandings.

It is also clear that CCAMLR continues to labour with issues where activities occurring external to the CCAMLR Area impact on CCAMLR's decision-making process. This has been evident in CCAMLR's response to dealing with many issues, including IUU fishing, ship safety and climate change.

And increasingly some Members interpret the Precautionary Principle, embodied in Article II of CCAMLR, and the precautionary approach adopted by several RFMOs as one and the same. The Principle establishes the framework within which management of activities within the Convention Area should occur, that is to avoid ongoing, serious or irreversible damage to Antarctic marine species or the marine ecosystem. Every decision within CCAMLR should be made from this framework; the burden of proof of low threat or impact is squarely on those who wish to undertake an activity. A precautionary approach requires that all possible practicable and reasonable precautions be taken into consideration when making decisions. Generally linked to an objective of sustainable harvesting of resources, this places much higher emphasis on the use of the resources.

Can Article II survive this onslaught? It is hard to judge. CCAMLR is an extraordinary convention

which, if its Members work collectively and in the spirit of its 1980 conception, can maintain a healthy and viable ocean ecosystem while allowing for some fishing. CCAMLR Members committed to this Convention must protect their investment to ensure its ongoing survival and viability. They must be tenacious in their demand for resolution of the many challenging issues still facing CCAMLR. Many citizens are watching their efforts and urging them on for the sake of a very special place on Earth.

References

1- ECO is an commentary published by conservationists at international meetings of environmental importance. It is prepared by conservations present at the meeting and draws from direct observation of discussions as well as interviews with delegates. Editions of ECO have been prepared at most Antarctic
2- Treaty system (ATS) meetings, including CCAMLR meetings since 1978.
3- https://www.gdrc.org/u-gov/precaution-7.html
4- Argentina, Australia, Belgium, Chile, European Economic Community, France, German Democratic Republic, German Federal Republic, Japan, New Zealand, Norway, Poland, South Africa, Union of Soviet Socialist Republics, United Kingdom and United States of America, Food and Agriculture Organisation (FAO), International Oceanographic Commission (IOC, International Union for Conservation and Natural Resources (IUCN), International Whaling Commission (IWC)
CCAMLR Conservation Measures are listed at https://www.ccamlr.org/en/conservation-and-management/conservation-measures
5- For example, see CCAMLR-XXV, 2006, para 16.09 (CCAMLR 2006); CCAMLR-XXXVI, 2007, para 7.14 (CCAMLR 2007); CCAMLR-XXVIII, 2009, para 15.13 (CCAMLR 2009).
6- For example CCAMLR-XXXIII/BG/21, Incorporating climate change into CCAMLR's decision making processes, CCAMLR-XXXIII (ASOC 2014); CCAMLR-XXXV/BG/24, Follow up to the Joint CEP/SC-CAMLR workshop on climate change and monitoring, CCAMLR-XXXV (ASOC 2016b).
7- his limit was calculated summing the maximum historical krill catch in each subarea, and was intended to operate as an "upper limit to catches on the existing fishing grounds" near vulnerable land-breeding predator colonies.

-ASOC, 2014. Incorporating climate change into CCAMLR's decision making processes (CCAMLR-XXXIII/BG/21,), CCAMLR-XXXIII, Hobart, Australia.
https://www.asoc.org/component/content/article/380#ccamlr2014
-ASOC, 2016. ASOC Meeting Report on CCAMLR XXXV (17–28 October 2016, Hobart, Australia), 2016 https://www.asoc.org/storage/documents/Meetings/CCAMLR/XXXV/ASOC_CCAMLR_Report_FINAL.pdf
-ASOC, 2016b. Follow up to the Joint CEP/SC-CAMLR workshop on climate change and monitoring (CCAMLR-XXXV/BG/24), CCAMLR-XXXV, Hobart, Australia.
https://www.asoc.org/component/content/article/380#ccamlr2016
-CCAMLR, 1988. Report of Seventh Meeting of the Commission (CCAMLR-VII), Hobart, Australia, 24 October – 4 November 1988, para 139.
-CCAMLR, 1990. Report of Ninth Meeting of the Commission (CCAMLR-IX), Hobart, Australia, 22 October – 2 November 1990, para 7.7.

-CCAMLR, 2006.Report of Twenty-fifth Meeting of the Commission (CCAMLR-XXV), Hobart, Australia, 23 October – 3 November 2006, para 16.09.
-CCAMLR, 2007. Report of Twenty-sixth Meeting of the Commission (CCAMLR-XXXVI), Hobart, Australia, 25 October – 2 November 2007, p2007, para 7.14.
-CCAMLR, 2009. Report of the Twenty-eighth Meeting of the Commission (CC-XXVIII), Hobart, Australia, 26 October – 6 November 2009, para 15.1.
-CCAMLR, 2015. CCAMLR Symposium 2015(CCAMLR-XXXIV/28), Delegations of Australia, Chile and the USA, Rev.2, Hobart, Australia, 19 – 30 October, 2015.
-CCAMLR, 2017. Report of the Thirty-sixth Meeting of the Commission (CC-XXXVI), Hobart, Australia, 16 – 27 October 2017, para 8.51.
-Constable, A.J., et al, 2000. Managing fisheries to conserve the Antarctic marine ecosystem: practical implementation of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), ICES Journal of marine Science, 57(3), 778-791.
-ECO, 1982. Vol XIX(4), Hobart, Australia, May 25 - June 11, 1982. https://www.asoc.org/component/content/article/58
-ECO, 1984. Vol XXIX(1), Hobart, Australia, September 3-14, 1984.https://www.asoc.org/component/content/article/58
-ECO, 1985. Vol XXXII(1), Hobart, Australia, September 2 - 13, 1985.https://www.asoc.org/component/content/article/58
-ECO, 1986. Vol XXXVII(2), Hobart, Australia, September 8 - 19, 1986. https://www.asoc.org/component/content/article/58
-ECO, 1987. Vol XLVI(2), Hobart, Australia, October 26 - November 6, 1987. https://www.asoc.org/component/content/article/58
-ECO, 1988. Vol XLXI(3), Hobart, Australia, October 24 - November 4, 1988. https://www.asoc.org/component/content/article/58
-ECO, 1989. Vol LXXV(3), Hobart, Australia, November 6 -17, 1989. https://www.asoc.org/component/content/article/58
-ECO, 1990. Vol LXXVII(3), Hobart, Australia, October 22, 1990 - November 2, 1990. https://www.asoc.org/component/content/article/58
-ECO, 1991. Vol LXXIX(1), Hobart, Australia, October 21 - November 1, 1991. https://www.asoc.org/component/content/article/58
-ECO, 1997a. Vol CXXXV(3), Hobart, Australia,November 7, 1997. https://www.asoc.org/component/content/article/58
-ECO, 1997b. CXXXV(1), Hobart, Australia, October 27, 1997. https://www.asoc.org/component/content/article/58
-ECO, 2001. Vol XX(1), Hobart, Australia, October 22, 2001. https://www.asoc.org/component/content/article/58
SC-CAMLR, 1997. Proceedings of the symposium on Antarctica and global change: interactions and impacts, CCAMLR Observer (Australia), SC-CAMLR-XVI/BG/31, Hobart, Australia, 27 -31 October 1997.
-United Nations, 2002. Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August to 4 September 2002, para 32(c), p 25. A/CONF.199/20/Corr.1 – Report of the World Summit on Sustainable Development.

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